shows R(H) and $\frac{\Delta\rho}{\rho}$ (H) for the crystals of this type, the curves a and b showing the courses for $\theta = 90^\circ$ and $\theta = 0^\circ$. The situation for the crystals of the third type is shown in Figs. 5 and 6. For $\theta = 0^\circ$, the trigonal axis parallel to $\vec{H}$, is perpendicular at $\theta = 90^\circ$; in the former case $R(\theta)$ and $\frac{\Delta\rho}{\rho}$ $(\theta)$ have a minimum and in the latter a maximum. Fig. 6 shows R(H) and $\frac{\Delta\rho}{\rho}$(H) for $\theta = 90^\circ$ and $\theta = 0^\circ$. Finally, the measurement of $\frac{\Delta\rho}{\rho}$ in the longitudinal $\vec{H}$ field is briefly mentioned. Fig. 7 shows $\frac{\Delta\rho}{\rho}$(H) for all three types of orientations. It was found that $\frac{\Delta\rho}{\rho} \simeq \alpha H^2$ holds with $\alpha_A \simeq 4.7 \cdot 10^{-10} oe^{-2}$, $\alpha_B \simeq 21 \cdot 10^{-10} oe^{-2}$, and $\alpha_C \simeq 29 \cdot 10^{-10} oe^{-2}$. The following values of resistivity were found at 20°C: $\rho_A = 1.37 \cdot 10^{-4}$ ohm.cm, and $\rho_B = \rho_C = 1.04 \cdot 10^{-4}$ ohm.cm. There are 7 figures and 20 references: 8 Soviet, 5 US, 3 British, and 2 German.

Ivanov, G. A.

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S/181/60/002/007/014/042
B006/B070

24.7600

AUTHORS: Gitsu, D. V., Ivanov, G. A.

TITLE: The Electric Properties of Single Crystals of Bismuth and Its Alloys. II. The Galvanomagnetic Properties of Alloys of Bismuth With Tellurium (Solid Solutions)

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 7, pp. 1464-1476

TEXT: Following the previous work (I), the authors give results of measurement of the Hall coefficient R and the magnetic resistance $\Delta\rho/\rho$ in magnetic fields between 1300 and 18,000 oe for single crystals of bismuth-tellurium alloys, as well as results of measurements of $\Delta\rho/\rho$ in longitudinal magnetic field. The cylindrical single crystals investigated were again placed in three different orientations of the crystallographic axes relative to the axis of the sample: A) The trigonal axis parallel to the axis of the sample. B) One of the binary axes parallel to the axis of the sample. C) The trigonal and one of the binary axes perpendicular to the axis of the sample. (These three cases

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The Electric Properties of Single Crystals of Bismuth and Its Alloys. II. The Galvanomagnetic Properties of Alloys of Bismuth With Tellurium (Solid Solutions)

are designated by A, Б, B). The samples had tellurium impurities of 0.02 to 0.5 at%. Fig. 1 shows rotation diagrams of A-type crystals: $R(\theta)$ and $\frac{\Delta\rho}{\rho}(\theta)$ between 0 and 60°. A clear dependence on the concentration of tellurium is seen; the higher the impurity concentration, the lower is the angular dependence. For 0.5 - 0.3 at% of tellurium, R and $\Delta\rho/\rho$ are practically independent of $\theta$; for 0.02 at% there is a distinct maximum at 30°. Fig. 2 shows $R(H)$ and $\frac{\Delta\rho}{\rho}(H)$ for different Te concentrations for $\theta$ = 30° and 0° (maximum and minimum in the rotation diagram). Also here, for concentrations 0.3 at% there is no more dependence on H. Analogous results were obtained on investigations of the crystals of the other two types. Fig. 3 shows $R(\theta)$ and $\frac{\Delta\rho}{\rho}(\theta)$ between 0 and 180°; Fig. 4, $R(H)$ and $\frac{\Delta\rho}{\rho}(H)$ for the type B, and Figs. 6 and 7 for the type C. The numbers in the vicinity of the curves give the concentration of tellurium; Figs. 5 and

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The Electric Properties of Single Crystals of Bismuth and Its Alloys. II. The Galvanomagnetic Properties of Alloys of Bismuth With Tellurium (Solid Solutions)

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8 show R as a function of tellurium concentration. In a longitudinal magnetic field, $\frac{\Delta\rho}{\rho}$ approximately obeys the law $\frac{\Delta\rho}{\rho} \simeq \alpha H^2$. Fig. 9 shows $\alpha$ as a function of the tellurium concentration; $\alpha$ falls exponentially with increasing concentration. The results of measurement of resistivity for pure bismuth and for bismuth doped with tellurium (0.02 - 0.5 at% of Te) are collected in a Table. Then, a phenomenological theory of the galvanomagnetic phenomena in crystals of the type $D_{3d}$ is given. The results obtained are discussed in detail. The authors finally thank Professor A. R. Regel', Doctor of Physical and Mathematical Sciences, and Professor A. V. Stepanov for their interest and advice. There are 9 figures, 1 table, and 12 references: 4 Soviet, 2 German, 2 US, 2 Japanese, and 2 British.

ASSOCIATION: Leningradskiy gosudarstvennyy pedagogicheskiy institut A. I. Gertsena (Leningrad State Pedagogical Institute A. I. Gertsen)

Card 3/4

S/058/62/000/008/077/134
A061/A101

24.7600

AUTHORS: Gitsu, D. V., Ivanov, G. A.

TITLE: Anisotropy of the galvanomagnetic properties of bismuth and its alloys with tellurium

PERIODICAL: Referativnyy zhurnal, Fizika, no. 8, 1962, 28, abstract 8E207 ("Uch.zap. Leningr. gos. ped. in-ta im. A. I. Gertsena", 1961, 207, 13 - 29)

TEXT: The anisotropy of the galvanomagnetic properties of Bi and its alloys with Te in magnetic fields of up to 18 kilogauss was investigated. The single crystals concerned had the shape of cylinders 3 - 4 mm in diameter and 5 - 8 cm long, and were oriented in one of the following three ways: A, the trigonal axis parallel to the specimen axis; B, the binary axis parallel to the specimen axis, and C, the specimen axis perpendicular to the binary and trigonal crystal axes. In type-A specimens a trigonal symmetry of the Hall coefficient $R_H$ and the magnetoresistance $\Delta\rho/\rho$ was observed, and the maximum of the values corresponded to a magnetic field perpendicular to the binary axis. However, on

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Anisotropy of the...

an increase of the Te concentration to 0.3 at.% this symmetry became circular. At the same time, the magnitude of the effects decreased. The resistance, $\rho$, of the alloy depended on the Te concentration, displaying a minimum at 0.2 at.% Te. The properties of type-B specimens also became less dependent on the magnetic field orientation on Te addition, without vanishing completely. The maximum of $\Delta\rho/\rho$ sets in at an angle of, say, $20^\circ$, formed by the magnetic field and the trigonal axis. In pure bismuth $R_H$ has a minimum which is also shifted by $10^\circ$, and where it changes its sign to positive. This sign change is removed by a Te addition. The same effect of Te impurity is observed in C-type specimens. In pure Bi the $\Delta\rho/\rho$ curve exhibits a double maximum for a magnetic field being perpendicular to the trigonal crystal axis. $\rho$ was found to change in the longitudinal magnetic field of all specimen types concerned. This effect was also reduced in magnitude by Te addition. These experimental results can be explained qualitatively from the consideration that the complex character of pure Bi anisotropy is due to the simultaneous presence of holes and electrons possessing different effective masses and a different anisotropy of mobility. The Te impurity leads to a decrease of the hole concentration and to an increase

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S/058/62/000/008/076/134
A061/A101

AUTHOR: Ivanov, G. A.

TITLE: Electrical properties of isoelectronic bismuth alloys

PERIODICAL: Referativnyy zhurnal, Fizika, no. 8, 1962, 26, abstract 8E194 ("Uch. zap. Leningr. gos. ped. in-ta im. A. I. Gertsena", 1961, v. 207, 31 - 44)

TEXT: Ternary Bi-Te-Sn alloys were investigated. Isoelectronic alloys, i.e., alloys with different impurity content, but with equal electron and hole concentrations, were found among them. This is due to the fact that the Te impurity raises the electron concentration and reduces the hole concentration, whereas the Sn impurity acts in the opposite way. For determining the concentration and the mobility of the carriers and the level of the chemical potential $\mu^*$, a model was used besides the isotropic zone model, in which the isoenergetic surface for electrons in k-space had the shape of three ellipsoids. For simplicity the mass inside each ellipsoid was assumed to be isotropic. With this model, a better quantitative agreement between theory and experiment was

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A061/A101

Electrical properties of isoelectronic bismuth alloys

achieved. It was found that the alloy resistance grew with the total impurity content for constant $\mu^*$. This is explained by mobility decrease, and it is noted that the mobility of the less degenerate carriers decreases faster. The Hall coefficient measured experimentally in isoelectronic alloys with high $\mu^*$ does not depend on the composition, while in alloys with low $\mu^*$ it drops with impurity concentration. This is explained by the faster growth of the hole mobility.

I. Farbshteyn

[Abstracter's note: Complete translation]

Card 2/2

S/137/62/000/007/055/072
A057/A101

AUTHORS: Gitsu, D. V., Ivanov, G. A., Luzhkovskiy, V. G.

TITLE: The microhardness of bismuth alloys and its relation to electrical characteristics of these alloys

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 7, 1962, 66, abstract 7I424 ("Uch. zap. Leningr. gos. ped. in-ta im. A. I. Gertsena", 1961, 207, 45 - 50)

TEXT: An investigation of the microhardness of Bi-Te and Bi-Sn-Te alloys, carried out with pressed samples, indicates apparently, that the microhardness of alloys containing a small amount of admixture is determined principally by changes of electron concentration effected by this admixture, rather than by the number of admixture atoms.

T. Rumyantseva

[Abstracter's note: Complete translation]

Card 1/1

S/137/63/000/001/013/019
A006/A101

AUTHORS: Gitsu, D. Y., Ivanov, G. A.

TITLE: On calculating the anisotropy of galvanomagnetic properties in bismuth single crystals

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1963, 10, abstract 1I49 ("Bul. Akad. Shtintse RSSMold., Izv. AN MoldSSR", 1962, no. 5, 83 - 91, Moldavian summary)

TEXT: A multi-ellipsoidal Shoenberg model (D. Shoenberg "Phil. Trans. Roy. Soc.", 1952, A245) was calculated for the case of Bi and Bi with Te admixture and the results were compared with the experiment. It was found that the given model was in agreement with experimental data. It follows that in reproducing the picture of anisotropy of galvanomagnetic properties for single crystals of Bi and its alloys with Te at room temperature, it is necessary to take into account the inclination of the main axes of the ellipsoidal surfaces in the conductivity zone, to the symmetry axes of the crystal. It is easy to select a model of the zonal structure of crystals from the rotation diagrams of galvanomagnetic effects.

A. Loshmanov

[Abstracter's note: Complete translation]

Card 1/1

33338
S/181/62/004/001/004/052
B102/B138

24.2700 (1043, 1137, 1482)

AUTHORS: Gitsu, D. V., Ivanov, G. A., and Popov, A. M.

TITLE: Thermoelectromotive force in bismuth and its alloys with tellurium

PERIODICAL: Fizika tverdogo tela, v. 4, no. 1, 1962, 22 - 28

TEXT: Measurement was made of the thermo-emf α of Bi single crystals with a tellurium impurity. The temperature difference was between 2 and 10°C in dependence on the Te concentration. When the temperature gradient was oriented parallel to the trigonal axis, the differential thermo-emf was denoted by $\alpha_{\parallel}$, for a perpendicular gradient it was $\alpha_{\perp}$; anisotropy was thus characterized by $\alpha_{\parallel}/\alpha_{\perp}$. The measurements were carried out by a compensation method using a ППТН-1 (PPTN-1) potentiometer and copper-constantan thermocouples. α dropped rapidly with increasing Te content (from 0 - 0.4 at%); the anisotropy also decreases, vanishing at 0.1 at% Te where the $\alpha_{\parallel}$ and $\alpha_{\perp}$ curves meet. In order to explain this behavior the rotation diagrams were taken for the thermo-emf of pure and impure single

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Thermoelectromotive force in...

crystals. In the first case they were elliptic and in the second circular. Exact measurements showed that there was no anisotropy between 0.1 and 0.3 at% Te. From the equations of the isoenergetic surfaces of conduction and valence bands, on the assumption that the electron and hole mean free paths were independent of carrier energy for both pure Bi and its alloys,

$$\alpha_{ij}=\frac{\sigma_{ij}\frac{\mu}{kT}-\sigma'_{ij}\frac{1}{eT}}{\sigma_{ij}}. \qquad (8)$$

was found;

$$\sigma_{ij}=-\frac{2e^3\sqrt{2m_1m_2m_3}}{3\pi^2\hbar^3m_i}\delta_{ij}\int_0^\infty \tau E^{3/2}\frac{\partial f_0}{\partial E}\,dE \qquad (6)$$

$$\sigma'_{ij}=-\frac{2e^3\sqrt{2m_1m_2m_3}}{3\pi^2\hbar^3m_i}\delta_{ij}\int_0^\infty \tau E^{3/2}\frac{\partial f_0}{\partial E}\,dE. \qquad (7)$$

$\mu$ denotes the level of chemical potential. For a relaxation time

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Thermoelectromotive force in...

$\tau \sim E^{-1/2}$, $\alpha_j = \frac{k}{e}\left[\mu^* - \frac{2F_1(\mu^*)}{F_0(\mu^*)}\right]$ where $\mu^*$ is the reduced level of chemical potential. The same relation is found for total thermo-emf, if the contributions of the sets of ellipsoids are added. $\alpha_{\parallel} = \alpha_{\perp} = \frac{1}{eT}\left(\mu - \frac{A'}{A}\right)$, where

$$A = -\frac{2e^2\sqrt{2m_1m_2m_3}}{3\pi^2\hbar^3}\delta_{ij}\int_0^\infty \tau E^{3/2}\frac{\partial f_0}{\partial E}dE, \qquad (21)$$

$$A' = -\frac{2e^2\sqrt{2m_1m_2m_3}}{3\pi^2\hbar^3}\delta_{ij}\int_0^\infty \tau E^{3/2}\frac{\partial f_0}{\partial E}dE. \qquad (22)$$

These relations hold if one electron remains in the Bi alloy with increasing Te content. This contains the vanishing anisotropy found experimentally. In anisotropic metals (Zn, Cd, Hg), semimetals (Bi, Sb) and semiconductors (CdSb) anisotropy may be considerable (Bi: $\alpha_{\parallel}$ = 96.6 μv/deg, $\alpha_{\perp}$ = 58.0 μv/deg at 18°C). There are 2 figures, 1 table, and 13 references: 6 Soviet and 7 non-Soviet. The four most recent references to English-language publications read as follows: G. E. Smith. Phys. Rev., 115, 1561, 1959; B. Abeles a. S. Meiboom. Phys. Rev., 101, 544, 1956; A. H. Wilson. The theory of metals, Cambridge, 1954;

Card 3/4

Galvanomagnetic properties of solid solutions of Bi-Sb in the temperature interval 77°-300°K and the influence of the important impurity tellurium on their properties. G. A. Ivanov, A. M. Popov (15 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds, Kishinev, 16-21 Sept 1963

S/181/63/005/003/037/046
B102/B180

AUTHORS: Ivanov, G. A., and Popov, A. M.

TITLE: Variation in the region of the weak magnetic field in bismuth and its alloys with antimony as a function of temperature

PERIODICAL: Fizika tverdogo tela, v. 5, no. 3, 1963, 946-948

TEXT: At room temperature the weak-field region extends to 1300 oe ($H_{lim}$), shrinking rapidly with falling temperature. At 77°K $H_{lim} \simeq$60oe. For Bi single crystals, Bi-Sb single crystals (7at%Sb), and compacted specimens the field strength dependence of the resistivity ratios (applied in parallel to the triginal axis) were measured with and without field. The graph shows that $H_{lim}$ for pure Bi (compacted polycrystals as well as single crystals) lies at higher field strengths (60oe) than $H_{lim}$ of the alloy (~60oe). As a temperature function for pure Bi $H_{lim}$ increases monotonically from -200 to 0°C. There are 2

figures.

ASSOCIATION: Leningradskiy gosudarstvennyy pedagogicheskiy institut im. A. I. Gertsena (Leningrad State Pedagogical Institute imeni A. I. Gertsen)

SUBMITTED: November 3, 1962

ACCESSION NR: AP3000622 S/0181/63/005/005/1406/1410

AUTHOR: Gitsu, D. V.; Ivanov, G. A.

TITLE: Density of electron states in the conduction band of bismuth

SOURCE: Fizika tverdogo tela, v. 5, no. 5, 1963, 1406-1410

TOPIC TAGS: state density, Bi, Te, chemical potential, conduction band, current carrier, relaxation time

ABSTRACT: The authors have analyzed the applicability of the formula derived from the ellipsoidal model of Shoenberg (Proc. Roy. Soc. A, 170, 341, 1939) for Bi at high levels of chemical potential in the conduction band. They followed the simplest technique: comparing concentration of current carriers with the position of the chemical-potential level. They have shown that the concentration of electrons in Bi-Te alloys at room temperature may be computed by the simple model of B. Abeles and S. Meiboom (Phys. Rev. 101, 544, 1956), with an accuracy that is limited only by the experiment, not by theory. The dominant mechanism of scattering in these alloys is of the same type occuring in atomic semiconductors. The possible density of electron states in the conduction band of Bi is directly proportional to the square root of the energy; i.e., the effective masses do not

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ACCESSION NR: AP3000622

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change appreciably within the limits of measurements up to 0.4 ev. "In conclusion the authors express their thanks to Professor A. R. Regel' for his interest in the present work." Orig. art. has: 1 figure and 10 formulas.

ASSOCIATION: Leningradskiy gosudarstvenny*y pedagogicheskiy institut im A. I. Gertsena (Leningrad State Pedagogical Institute)

SUBMITTED: 31Oct62 DATE ACQ: 11Jun63 ENCL: 00

SUB CODE: 00 NO REF SOV: 008 OTHER: 007

Card 2/2

L 13028-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD

ACCESSION NR: AP3000626 S/0181/63/005/005/1428/1429

AUTHOR: Ivanov, G. A.; Popov, A. M.

TITLE: Free path length of current carriers in bismuth and in its alloys with antimony

SOURCE: Fizika tverdogo tela, v. 5, no. 5, 1963, 1428-1429

TOPIC TAGS: specific resistance, Hall constant, free path, Bi, Ge, impurity layer, current carrier, polycrystalline material

ABSTRACT: The authors have investigated changes (in the temperature interval 77-300K) in specific resistance and in the Hall constant for polycrystalline samples of Bi and for its alloys with Sb in relation to grain size and in comparison with single-crystal samples. They found the free path to be dependent on grain size, and they have concluded that the changes are due to limitation of free path of current carriers by grain boundaries in polycrystalline material. They state that considerable error may arise in evaluating concentration and mobility of current carriers in Bi-Sb alloys on the basis of measurements made in polycrystalline material. Conclusions concerning the solubility of several impurities in Bi, based on the "semiconductor" path of specific resistance in

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ACCESSION NR: AP3000626

alloys, may be erroneous because of the formation of impurity layers during growth of single crystals. An alloy of Bi and 0.75 atomic percent Ge has a "semiconductor" course of specific resistance, but the authors have established that the Hall constant of this alloy is no different from the Hall constant for pure Bi in the temperature interval 77-300K. Orig. art. has: 3 figures and 1 formula.

ASSOCIATION: Leningradskiy gosudarstvenny*y pedagogicheskiy institut im. A. I. Gertsena (Leningrad State Pedagogical Institute)

SUBMITTED: 12Jan63 DATE ACQ: 11Jun63 ENCL: 00

SUB CODE: 00 NO REF SOV: 003 OTHER: 003

Card 2/2

IVANOV, G.A.

Use of a variable magnetic field for determining $\frac{e}{m}$. Uch zap. Ped inst. Gerts. 197:215-222 '58. (MIRA 16:9)
(Electron beams)
(Magnetic fields)

IVANOV, G.A.; POPOV, A.M.; CHISTYAKOV, B.I.

Electric properties of binary Bi alloys in a wide temperature range. Part 1: Solid solutions of Sn, Sb, and Te in bismuth (polycrystals). Fiz. met. i metalloved. 16 no.2:184-192 Ag '63. (MIRA 16:8)

1. Leningradskiy gosudarstvennyy pedagogicheskiy institut im. A.I. Gertsena.
(Bismuth alloys) (Solutions, Solid)

ACCESSION NR: AP4009377 S/0126/63/016/006/0848/0855

AUTHORS: Ivanov, G. A.; Chistyakov, B. I.

TITLE: Electrical properties of ternary alloy of bismuth in the temperature range 77-450K. 2

SOURCE: Fizika metallov i metallovedeniye, v. 16, no. 6, 1963, 848-855

TOPIC TAGS: ternary alloy, Hall effect, specific resistance, thermoelectric electromotive force, tellurium, tin, recovery alloy, electron, hole, current carrier, semiconductor, valency, atomic number

ABSTRACT: The authors present an analysis of the experimental work performed earlier (L. I. Mokiyevskiy and G. A. Ivanov, ZhTF, 1957, 27, 8, 1695; G. A. Ivanov and A. R. Regel', ZhTF, 1955, 25, 1, 49). In these experiments the properties of specific resistance, Hall effect, magnetic strength, and thermoelectric emf in the temperature range of 77-450K for a ternary alloy of bismuth with admixtures of Sn and Te were investigated. Special attention was given to the properties of recovery alloys with an equal number of electrons and holes. The alloys had relative atomic percentages of Te impurity (ratio of Te percent to total impurity percent) of 5, 10, 15, 20, 30, 40, 50, and 75. Total impurities contents were 0.05, 0.1, 0.2 and 0.3%.

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ACCESSION NR: AP4009377

The Hall coefficient and the specific resistance were found to reach sharp extremes at characteristic temperatures. It was concluded that the concentration of the current carriers created by the components of a ternary alloy depended not only on the valencies but also on the atomic numbers of the elements of the 4th and the 6th groups. Orig. art. has: 6 figures and 1 table.

ASSOCIATION: Leningradskiy pedagogicheskiy institut im. A. I. Gertsena (Leningrad Teachers Institute)

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|---|---|---|
| SUBMITTED: 12Dec62 | DATE ACQ: 03Feb64 | ENCL: 00 |
| SUB CODE: IC, SS | NO REF SOV: 010 | OTHER: 009 |

Card 2/2

ACCESSION NR: AP4019863 S/0181/64/006/003/0938/0940

AUTHOR: Ivanov, G. A.

TITLE: Computing the concentration and mobility of current carriers in bismuth

SOURCE: Fizika tverdogo tela, v. 6, no. 3, 1964, 938-940

TOPIC TAGS: semiconductor carrier, semiconductor, semiconductor property

ABSTRACT: The indicated properties have been determined by several workers at various temperatures. The author examines these results and compares them with computed values. The results are summarized in Fig. 1 on the Enclosure. It may be seen that the carrier concentration varies approximately at $T^{3/2}$ through a wide range of temperature (120-350K), and electron mobility varies as $T^{-5/2}$ through the same range. Orig. art. has: 1 figure and 11 formulas.

ASSOCIATION: Leningradskiy gosudarstvennyy pedagogicheskiy institut im. A. I. Gertsena (Leningrad State Pedagogical Institute)

SUBMITTED: 10Oct63 DATE ACQ: 31Mar64 ENCL: 01

Card 1/3

IVANOV, G.A.

Continentality of coal-bearing sediments (facies conditions governing the formation of coal-bearing strata). Izv.vys. ucheb.zav.; geol.i razv. 7 no.8:45-57 Ag '65.

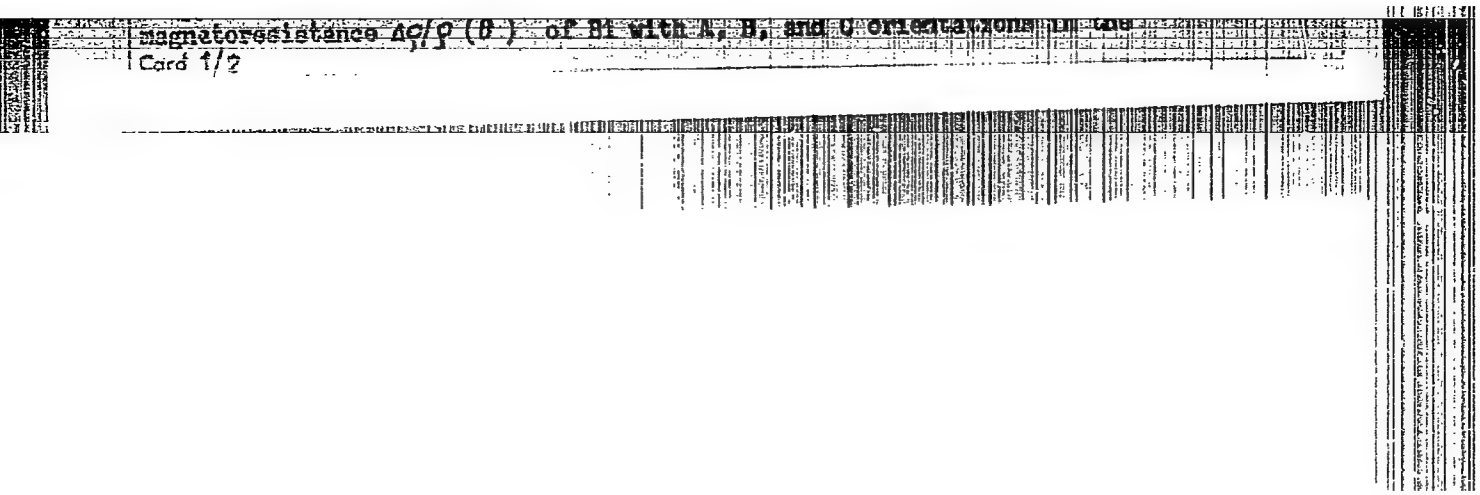
(MIRA 1[illegible]:21)

1. Leningradskiy gornyy institut im. G.V.Plekhanova.

CITED SOURCE: Sb. Issled. po poluprovodnikam. Kishinev, Kart'ya Moldovenyaske,

UIC

TRANSLATION: The effect of Te addition upon the anisotropy of galvanomagnetic [illegible] of Bi single crystals was studied. The specimens with these orientations



ACC NR: AR7000884 SOURCE CODE: UR/0058/66/000/009/E107/E107

AUTHOR: Ivanov, G. A.; Koposov, G. D.

TITLE: Electrical properties of pure bismuth and its alloys with tin over a wide range of temperatures

SOURCE: Ref. zh. Fizika, Abs. 9E852

REF SOURCE: Uch. zap. Leningr. gos. ped. in-ta im. A. I. Gertsena, v. 265, 1965, 205-213

TOPIC TAGS: bismuth, bismuth alloy, ~~bismuth~~ tin alloy, electric property, bismuth base alloy, tin containing alloy, Hall coefficient, temperature variation, specific resistance

ABSTRACT: A study was made of the electrical properties of Bi and the Bi—Sn alloy within 77—273K. The amount of Sn was varied between 0.2 to 1.5 at. %. The Hall coefficient component $R_{123}$ was positive in all the alloys. With a decrease in temperature the $R_{123}$ component was found to change its sign from negative to positive, reach a maximum, and begin to decrease. Whereas specific resistance $\rho_{11}$ increases almost linearly with increasing temperature, $\rho_{33}$ with increasing

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ACC NR: AR7000884

temperature reaches a maximum and behaves as a semiconductor. An increase in the amount of Sn brings about a monotonic increase in $\rho_{11}$. An analysis was made of the dependence of magnetic resistance on temperature and the amount of Sn. Tables are given of circular diagrams of the magnetic resistance of both pure and alloyed bismuth. Results obtained from single and multi-ellipsoid models of the valence band of Bi are discussed qualitatively. [Translation of abstract] [SP]

SUB CODE: 20//

Card 2/2

ACC NR: AR7000885 SOURCE CODE: UR/0058/66/000/009/E107/E107

AUTHOR: Ivanov, G. A.; Chistyakov, B. I.

TITLE: Electrical properties of binary alloys of bismuth and tellurium and bismuth and tin over a wide range of temperatures

SOURCE: Ref. zh. Fizika, Abs. 9E853

REF SOURCE: Uch. zap. Leningr. gos. ped. in-ta im. A. I. Gertsena, v. 265, 1965, 214-223

TOPIC TAGS: ~~alloy~~, bismuth alloy, binary alloy, ~~binary bismuth alloy~~, ~~bismuth~~ tellurium alloy, ~~bismuth~~ tin alloy, electric property, high temperature effect, thermoelectromotive force

ABSTRACT: A study was made of the effect of temperature within the -196 to 200C range on the Hall effect R, specific resistance $\frac{\Delta\rho}{\rho}$, and the thermoelectromotive force coefficient $\alpha$ in polycrystalline samples of alloys of bismuth (Bi) and tin (Sn) and bismuth and tellurium (Te). In Bi—Te, R was found to increase with a decrease in temperature (T). When T is above room temperature, R(T) is at its maximum and shifts toward the region of higher temperatures with an increase in concentration of Te. In alloys with arbitrary amounts of Te, $\rho(T)$ is

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ACC NR: AR7000885

similar to that in pure Bi. At high temperatures, R in Bi—Sn differs little from R in pure Bi. When the temperature is decreased, R reaches a maximum, then changes its sign for the positive. The lower the Sn content, the lower the temperature at which the change of sign occurs. Curves $\alpha(T)$ are analogous to curves R(T). In the region of low temperatures, $\rho$ increases with an increase in T and passes through the maximum, which is followed by a minimum and a subsequent tendency toward a value which corresponds to that of pure Bi. A qualitative evaluation is made of the results obtained. It is found that efficiency $\eta$ in Te increases inversely with temperature. Yu. Ogrin. [Translation of abstract] [SP]

SUB CODE: 20//

Card 2/2

ACC NR: AR7000881 SOURCE CODE: UR/0058/66/000/009/E106/E106

AUTHOR: Ivanov, G. A.

TITLE: Mobility of current carriers in bismuth alloys and the reluctance

SOURCE: Ref. zh. Fizika, Abs. 9E844

REF SOURCE: Uch. zap. Leningr. gos. ped. in-ta im. A. I. Gertsena, v. 265, 1965, 246-253

TOPIC TAGS: ~~alloy~~, bismuth alloy, current carrier, magnetic reluctance, hole mobility, electron mobility, impurity band, energy band structure

ABSTRACT: The mean mobilities of electrons and holes in Bi—Sn—Te alloys are calculated at room temperature. The calculation is based on the assumption that the band structure of Bi remains virtually unchanged with the addition of impurities. Changes are observed only in the position of the level of the chemical potential in the bands. A model is used, which takes into consideration the complex band structure in which the ellipsoids of equal energy in the K-space, are replaced by spheres. Comparisons with experimental results have shown that the mobilities are determined correctly and that the constant-energy surfaces remain relatively

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ACC NR: AR7000881

unchanged when the Fermi level rises, and that the reluctance in Bi as well as in the alloys is determined not by the thermal variance of velocities of the carriers, but by the complexity of the configuration of the constant-energy surfaces. Yu. Ogrin. [Translation of abstract]

[GC]

SUB CODE: 20, 11

Card 2/2

IVANOV, G.A.

On the so-called "island land" in ore formation; concerning the article of B.A.Afanas'ev, G.M.Yaroslavtsev, and V.I. IAtsuk "Conditions governing the formation of coal-bearing sediments in marginal troughs as revealed in a study of the Pechora Basin." Zap. LGI 47 no.2:129-137 '64.

(MIRA 18:3)

Ivanov G.

PETROV, L., Inzh.; IVANOV, G., dots.

Principles and contributions to hard-ray technic and fine-focus roentgen tube in roentgenodiagnosis. Suvrem. med., Sofia 8 no.1:71-83 1957.

(ROENTGENOGRAPHY,
hard-ray technic & fine-focus tube (Bul))

IVANOV, Ger. Ag.

Diagnostic and therapeutic value of bronchoscopy in endobronchial tuberculosis. Suvrem. med., Sofia 9 no.4:82-88 1958.

1. Iz Detsko-iunosheskiia sanatorium v gr. Trianna (Gl. lekar: Iv. Vuglenov)

(TUBERCULOSIS, PULMONARY
bronchoscopy, diag. & ther. value (Bul))
(BRONCHOSCOPY, in various dis.
pulm. tuber., diag. & ther. value (Bul))

IVANOV, G.; TSANKOV, I., Dots.

Case of melorheostosis. Khirurgiia, Sofia 11 no.4:368-370 1958.
(OSTEOPETROSIS, case reports,
melorheostosis (Bul))

IVANOV, Gerasim

Rare anomaly of the tracheobronchial tree. Probl.tub. 36 no.4:108 '58 (MIRA 11:7)

1. Iz Gosudarstvennogo detsko-yunosheskogo sanatoriya g. Trevna Bolgariya (glawnyy vrach Iv. Vyglenov).
(BRONCHI--ABNORMITIES AND DEFORMITIES)

IVANOV,Ger.As.

Relationship between tracheo-bronchial tuberculosis and morphological pulmonary changes. Suvrem. med., Sofia 11 no.2-3:57-65 '60.

1. Iz Detsko-iunosheskiia Sanatorium - gr. Triavna., Glaven lekar: Iv. Al. Vuglenov.
(TUBERCULOSIS PULMONARY pathol.)

Ivanov, D.

2

KALAYDZHIEV, G.
Surname (in caps); Given Names

Country: Bulgaria

Academic Degrees: Doctor

Affiliation: Aspirant at the Scientific Research Institute for Health Resort Study, Balneology, and Physiotherapy (NIIKF)

Source: Sofia, Priroda, No 1, Jan/Feb 61, pp 57-65

Data: "Mineral Springs in the Blagoevgrad Okrug."

Co-authors:
IVANOV, G., Chemist

L 25921-66 JT

ACC NR: AP5016680 SOURCE CODE: UR/0109/65/010/006/1164/1166

AUTHOR: Ivanov, G. A.; Ryabova, L. A.; Savitskaya, Ya. S.; Katskevich, T. L.; Chelyshkov, S. P.

ORG: none

TITLE: Second Scientific Session of the Scientific Council on Physical Electronics

SOURCE: Radiotekhnika i elektronika, v. 10, no. 6, 1965, 1164-1166

TOPIC TAGS: physics conference, chemisorption, adsorption, semiconductor device, secondary electron emission, photoelectric property, thermoelectric property

ABSTRACT: The second session of the conference on physical electronics was held 23-24 Nov 1964, with 142 delegates from 41 organizations in attendence to hear 18 reports in 3 sessions. The first session was dedicated to the question of chemisorbtion of various gasses on the surfaces of solids and questions of emission and antiemission coatings. The properties of chemical adsorbtion, as well as the influence of chemical adsorbtion on the operation of semiconductors and the structure of adsorbed films on crystals. Another reporter noted that the antiemission property of gold appears to take place only in the system gold-barium, not with barium oxide. The second session was dedicated

Card 1/2 UDC: 061.3: 621.38:53

L 25221-66

ACC NR: AP6016680

to the questions of thermoelectronic, photoelectronic and secondary electron emission, and included reports on statistical and distribution studies of these types of emission. The subject of the third session was autoelectron emission, which included various theories to explain the phenomenon and a report on a study of the power spectrum of autoelectrons from germanium layers on tungsten. [JPRS]

SUB CODE: 20, 07 / SUBM DATE: none

Card 2/2

L 28560-66 EWT(m)/EWP(w)/ETC(f)/T/EWP(t)/ETI LIP(c) RDW/JD

ACC NR: AP6012511 SOURCE CODE: UR/0181/66/008/004/1293/1295

AUTHORS: Gitsu, D. V.; Ivanov, G. A. 54 8

ORG: Institute of Applied Physics, AN MSSR, Kishinev (Institut prikladnoy fiziki AN MSSR)

TITLE: Some features of the influence of Sn and Te impurities on the anisotropy of the galvanomagnetic properties of bismuth

SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1293-1295

TOPIC TAGS: tin, selenium, bismuth, galvanomagnetic effect, impurity level, magnetoresistance, Hall constant, bismuth base alloy, ternary alloy

ABSTRACT: This is a continuation of earlier work by one of the authors (Ivanov, FMM v. 16, 848, 1963 and earlier), where it was shown that, at certain concentrations, ternary alloys of bismuth with Sn and Te have the same properties as pure bismuth, meaning that the Sn and Te cancel each other out. The present study reports measurements of the angular dependence of the magnetoresistance and the Hall coefficient at room temperature, in a magnetic field of 18 kOe, for two such compensated cylindrical samples with different crystallographic orientations. The results showed that when the axis of the sample was parallel to the $C_3$

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L 28560-66

ACC NR: AP6012511

axis of the crystal the sample had galvanomagnetic properties similar to that of pure bismuth. When the sample axis was parallel to the crystallographic $C_2$ axis the magnetoresistance of the 'compensated' sample exceeded that of a binary alloy with either Sn or Te. In the case of sample A, the diagram remains symmetrical regardless of the nature of the additive, and the magnetoresistance was lower than that of the alloy with tin, and much higher than that of the alloy with tellurium. The Hall coefficient of the compensated samples was larger in absolute magnitude than in pure bismuth. It is concluded that although the influence of the impurities on the anisotropy of the galvanomagnetic properties of bismuth has a rather complicated character, it can be explained qualitatively within the framework of the existing theories. Orig. art. has: 2 figures, 3 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 10Nov65/ ORIG REF: 004/ OTH REF: 001

Card 2/2

IVANOV, G A

Novoye v tekhnike remonta parovozov; opyt parovozoremontnykh zavodov (Innovation in the technique of repairing locomotives, by) G. A. Ivanov, I. M. Shatsman. Moskva, Transzheldorizdat, 1955.

96 p. illus., diagrs.

"Literatura": p. 98

IVANOV, G.A., inzhener.

Modernization of the KT type crane motor. Energetik 4 no.7: 25-26 Jl '56. (Electric motors) (MLRA 9:9)

IVANOV, G.A., inzh.; TOSTIKOV, I.P., inzh.

Operating a railroad experimental shop. Izobr. i rats. no.6: 37-39 Je '58. (MIRA 11:9)
(Railroad research)

IVANOV, Georgiy Andreyevich; SOROKIN, N.N., red.; VERINA, G.P., tekhn.red.

[Mechanization of clinker removal operations at stations] Mikhanizirovannaia uborka shlaka na stantsiiakh. Moskva, Gos.transp.zhel-dor.izd-vo, 1959. 61 p. (MIRA 13:1)
(Railroads--Equipment and supplies) (Ash disposal)

IVANOV, G.A., inzh.

Increasing number of inventor's and efficiency promoters' proposals in railroading. Zhel.dor.transp. 42 no.11:65-67 N '60.
(MIRA 13:11)

(Railroads--Technological innovations)

SHCHUKIN, Mikhail Mikhaylovich; ZAKIN, Ya.Kh., kand.tekhn.nauk, retsenzent; IVANOV, G.A., kand.tekhn.nauk, red.; SIMONOVSKIY, M.Z., red.; SPERANSKAYA, O.V., tekhn.red.

[Coupling systems for automobiles and tractors; design, theory, and calculation] Stsepnye ustroistva avtomobilei i tiagachei; konstruktsiia, teoriia i raschet. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1961. 206 p. (MIRA 14:4)

(Couplings) (Automobile trains)

IVANOV, G.A.

Electric properties of single crystals of Te - Bi solid solutions in the temperature range 77°-300°K. Fiz. tver. tela 5 no.11: 3173-3178 N '63. (MIRA 16:12)

1. Leningradskiy gosudarstvennyy pedagogicheskiy institut imeni A.I.Gertsena.

IVANOV, G.A.

Calculating current carrier concentration and mobility in bismuth. Fiz. tver. tela 6 no.3:938-940 Mr '64. (MIRA 17:4)

1. Leningradskiy gosudarstvennyy pedagogicheskiy institut imeni A.I.Gertsena.

:/AKOV, G.L.

"Cleavage (Jointing) in Coals and enclosing Rocks and Ways of putting it to Practic l Use," (Klivazh (otdel'nosti) v uglyakh i vmeshchayushchikh porodakh i puti yego prakticheskogo ispol'zovaniya), Part I. GONTI, 1939.

IVANOV, G.A.

Cyclic structure of coal-bearing deposits of the Vorkuta fields.
Trudy Inst.geol.nauk. no.90:19-20 '47. (MLRA 9:11)
(Vorkuta--Coal geology)

IVANOV, G.A.

Principles of detailed lithological correlation of coal-bearing deposits and effective indexing of coal beds. Trudy Inst.geol. nauk. no.90:74-75 '47. (MLRA 9:11)

(Coal geology)

IVANOV, G.A.

Coal-bearing capacity of the northeastern region of the Pechora Basin. Trudy Inst.geol.nauk. no.90:108-110 '47. (MLRA 9:11)
(Pechora Basin--Coal)

IVANOV, G., inzhener; FREYDE, N., inzhener.

Improvements in coal surveying efficiency. Mast.ugl. 3 no.9:13-16 S'54. (MLRA 8:2)
(Mine surveying)

IVANOV, G.

Freide, N. Improvement of rationalizers in surveying coal deposits. p. 86.
MINNO DELO, Sofiya, Vol. 10, no. 1, Jan./Feb. 1955.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

IVANOV, G.A.

Facies and geotectonic method of analyzing coal-bearing deposits and using it in geological prospecting operations. Trudy Lab.geol. ugl. no.5:127-152 '56. (MLRA 9:8)

1. Leningradskiy gornyy institut.
(Coal geology) (Prospecting)

Name: IVANOV, Grigoriy Aleksandrovich

Dissertation: Regularity of structure, formation, and change of coal-bearing deposits (formations)

Degree: Doc Geol-Min Sci

Affiliation: [not indicated]

Defense Date, Place: 12 Jun 57, Council of Leningrad Order of Lenin and Order of Labor Red Banner Mining Inst imeni Plekhanov

Certification Date: 10 Nov 57

Source: BMVO 24/57

IVANOV, G. A.

ABRAMOV, S.K., kand.tekhn.nauk; AVERSHIN, S.G., prof., doktor tekhn.nauk; AMMOSOV, I.I., doktor geol.-min.nauk; ANDRIYEVSKIY, V.D., inzh.; ANTROPOV, A.N., inzh.; AFANAS'YEV, B.L., inzh.; BERGMAN, Ya.V., inzh.; BLOKHA, Ye.Ye., inzh.; BOGACHEVA, Ye.N., inzh.; BUKRINSKIY, V.A., kand.tekhn.nauk; VASIL'YEV, P.V., doktor geol.-min.nauk; VINOGRADOV, B.G., inzh.; GOLUBEV, S.A., inzh.; GORDIYENKO, P.D., inzh.; GUSEV, N.A., kand.tekhn.nauk; DOROKHIN, I.V., kand.geol.-min.nauk; KALMYKOV, G.S., inzh.; KASATOCHKIN, V.I., doktor khim.nauk; KOROLEV, I.V., inzh.; KOSTLIVTSEV, A.A., inzh.; KRATKOVSKIY, L.F., inzh.; KRASHENINNIKOV, G.F., prof. doktor geol.-min.nauk; KRIKUNOV, L.A., inzh.; LEVIT, D.Ye., inzh.; LISITSA, I.G., kand.tekhn.nauk; LUSHNIKOV, V.A., inzh.; MATVEYEV, A.K., dots., kand.geol.-min.nauk; MEPURISHVILI, G.Ye., inzh.; MIRONOV, K.V., inzh.; MOLCHANOV, I.I., inzh.; NAUMOVA, S.N., starshiy nauchnyy sotrudnik; NEKIPELOV, V.Ye., inzh., PAVLOV, F.F., doktor tekhn.nauk; PANYUKOV, P.N., doktor geol.-min.nauk; POPOV, V.S., inzh.; PYATLIN, M.P., kand.tekhn. nauk; RASHKOVSKIY, Ya.E., inzh.; ROMANOV, V.A., prof., doktor tekhn. nauk; RYZHOV, P.A., prof., doktor tekhn.nauk; SELYATITSKIY, G.A., inzh.; SPERANSKIY, M.A., inzh.; TERENT'YEV, Ye.V., inzh.; TITOV, N.G., doktor khim.nauk; GOKAREV, I.F., inzh.; TROYANSKIY, S.V., prof., doktor geol.-min.nauk; FEDOROV, B.D., dots., kand.tekhn.nauk; FEDOROV, V.S., inzh. [deceased]; KHOMENTOVSKIY, A.S., prof., doktor geol.-min.nauk; TROYANOVSKIY, S.V., otvetstvennyy red.; TERPIGOREV, A.M., red.; KRIKUNOV, L.A., red.; KUZNETSOV, I.A., red.; MIRONOV, K.V., red.; AVERSHIN, S.G., red.; BURTSEV, M.P., red.; VASIL'YEV, P.V., red.; MOLCHANOV, I.I., red.; RYZHOV, P.A., red.; BALANDIN, V.V., inzh., red.; BLOKH, I.M., kand. tekhn.nauk, red.; BUKRINSKIY, V.A., kand.tekhn.nauk, red.; VOLKOV, K.Yu., inzh., red.; VOROB'YEV, A.A., inzh., red.; ZVONAREV, K.A., prof. doktor tekhn.nauk, red.

(Continued on next card)

APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000619020019-3"

ABRAMOV, S.K.-- (continued) Card 2.

ZDANOVICH, V.G., prof.,doktor tekhn.nauk,red.; IVANOV, G.A., doktor geol.-min.nauk, red.; KARAVAYEV, N.M., red.; KOROTKOV, G.V., kand.geol.-min.nauk, red.; KOROTKOV, M.V., kand.tekhn.nauk, red.; MAKKAVEYEV, A.A., doktor geol.-min.nauk, red.; OMEL'CHENKO, A.N.,kand.tekhn.nauk,red.; SEMDERZON, E.M.,kand.geol.-min.nauk, red.; USHAKOV, I.N., dots., kand. tekhn.nauk, red.; YABLOKOV, V.S., kand.geol.-min.nauk,red.; KOROLEVA, T.I., red.izd-va; KACHALKINA, Z.I., red.izd-va; PROZOROVSKAYA, F.L., tekhn.red.; NADEINSKAYA, A.A., tekhn.red.

[Mining; an encyclopedia handbook] Gornoe delo; entsiklopedicheskii spravochnik. Glav. red. A.M.Terpigorev. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po ugol'noi promyshl. Vol.2. [Geology of coal deposits and surveying] Geologiia ugol'nykh mestorozhdenii i markscheiderskoe delo. Redkolegiia toma S.V.Troianskiy, 1957. 646 p. (MIRA 11:5)

1. Chlen-korrespondent AN SSSR (for Karavayev)
(Coal geology--Dictionaries)

IVANOV, G.A.

AUTHOR: Zhemchuzhnikov, Yu.A. 11-1-1/29

TITLE: Similarities and Differences of Features Between Facies, Facies-Cyclic and Facies-Geotectonic Methods of Studying Coal-Bearing Strata (Skhodstvo i razlichiya mezhdu fatsial'nym, fatsial'no-tsiklicheskim i fatsial'no-geotektonicheskim metodami izucheniya uglenosnykh tolshch)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geologicheskaya, 1958, # 1, pp 3-11 (USSR)

ABSTRACT: At the second Coal Geological Conference held in March 1955, the lectures of G.A. Ivanov, T.A. Ishina, V.V. Koperina, N.V. Rengarten and others dealt with different methods of examining coal-bearing strata. G.A. Ivanov and the author belong to a group of geologists who regard periodicity as one of the most important features of coal-bearing strata. The author elaborates on the similarities and differences existing between his views and those of G.A. Ivanov. Ivanov proposes to conduct the observations first of the facies, and afterwards of geotectonics, and therefore his method is called the facial-geotectonic method. However, his method starts with the differentiation according to granulometric differences, whereby coal and limestone are regarded as the

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Similarities and Differences of Features Between Facies, Facies-Cyclic and Facies-Geotectonic Methods of Studying Coal Bearing Strata

rocks with the finest granules. G.A. Ivanov emphasizes that his proposed facial-geotectonic method based on granulometric examinations and on the development of marked facies can chiefly be used by geologists prospecting for coal. G.A. Ivanov sees the essential difference between his method and the facial-cyclical analysis in the fact, that his method does not require the difficult separation and determination of numerous types of lithological rocks and their facial classification. He proposes to determine facies by cycles, and not cycles by facies, believing this method to be less difficult and more accurate. The author draws attention to the fact that not separate facies are determined by the Ivanov method, but groups of facies which are in contact with marked facies. The facial-cyclical method was successfully applied in the Kuznetsk and many other coal basins. Summarizing it may be stated that the facial geotectonic analysis of G.A. Ivanov has many similarities with the facial-cyclical method, in contrast to the facial analysis which disregards the rules of periodicity. In the lectures of T.A. Ishina, V.V. Koperina and others it is stated that facial

Similarities and Differences of Features Between **Facies, Facies-Cyclic** and **Facies-Geotectonic** Methods of Studying Coal Bearing Strata

analysis represents the study of primary or genetic properties of rocks originating during the process of sedimentation and subsequent diagenetic transformation. Based on the total of these indications, conclusions are drawn pertaining to the conditions under which sedimentation took place and the facial composition of the coal-bearing strata is established. The author disagrees with this view, in as much as it does not consider the importance of sequence or alternation of rocks for the formation of facies, their paragenetic composition. Summarizing it may be stated that lithologists, using facial analysis of the improved stage, i.e. as a facial-cyclical method, will obtain better results and will further improve the method itself. Lithology of coal-bearing strata requires further studies and exchanges of experiences on the matter. At the present time there are no differences existing between the methods of approach which cannot be overcome as long as they are not throttled by denying the geotectonic factor of alternation of rocks or by disregarding the importance of studying the individual lithologic characteristics of rocks or by ignoring the importance of establishing the

11-1-1/29

Similarities and Differences of Features Between **Facies, Facies-Cyclic** and **Facies-Geotectonic** Methods of Studying Coal Bearing Strata

different facies by all available methods.
There are 18 Russian references.

AVAILABLE: Library of Congress

Card 4/4

IVANOV, Grigoriy Aleksandrovich; SKROBOV, S.A., zam.glavnogo red.; SHABAROV, N.V., zam.glavnogo red.; IVANOVA, A.G., tekhn.red.

[Genetic classification of coal-bearing formations] Geneticheskaia klassifikatsiia uglenosnykh formatsii. Moskva, M-vo geol. i okhrany nedr SSSR, 1959. 30 p. (MIRA 12:8)
(Coal geology)

MATVEYEV, Aleksandr Kirillovich; VASIL'YEV, P.V., doktor geol.-mineral. nauk, retsenzent; KRAVTSOV, A.I., doktor geol.-mineral.nauk, retsenzent; IVANOV, G.A., doktor geol.-mineral.nauk, retsenzent; MIRONOV, K.V., nauchnyy red.; KOROLEVA, T.I., red.izd-va; KONDRAT'YEVA, M.A., tekhn.red.

[Geology of coal basins and deposits in the U.S.S.R.] Geologiia ugol'nykh basseinov i mestorozhdenii SSSR. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 495 p. (MIRA 13:11)

(Coal geology)

IVANOV, G.A.

Lithological methods of studying coal-bearing sediments. Zap. IGI 42 no.2:8-22 '62. (MIRA 15:6)
(Coal geology)

GITSU, D.V.; IVANOV, G.A.

Calculating the anisotropy of the galvanomagnetic properties of bismuth single crystals. Izv. AN Mold. SSR no.5:83-91 '62.
(MIRA 18:3)

SKROBOV, S.A., glav. red.; TYZHNOV, A.V., zam. glav. red.; SHABAKOV, N.V., zam. glav. red.; AMMOSOV, I.I., redaktor; red.; BURTSEV, D.N., red.; IVANOV, G.A., red.; KOROTKOV, G.V., red.; KOTLUKOV, V.A., red.; KUZNETSOV, I.A., red.; MIRONOV, K.V., redaktor; MOLCHANOV, I.I., redaktor; NEKIPELOV, V.Ye., red.; PONOMAREV, T.N., red.; POPOV, V.S., red.; PROKHOROV, S.P., red.; YAVORSKIY, V.I., red.; LAGUTINA, V.V., red. toma; LEVENSHTEYN, M.L., red. toma; SHIROKOV, A.Z., red. toma; IZRAILEVA, G.A., red.izd-va; KROTOVA, I.Ye., red. izd-va; IVANOVA, A.G., tekhn. red.

[Geology of coal and combustible shale in the U.S.S.R.]Geologiia mestorozhdenii uglia i goriuchikh slantsev SSSR. Glav. red. I.I. Ammosov i dr. Moskva, Gosgeoltekhizdat. Vol.1.[Coal basins and deposits in the south of the European part of the U.S.S.S;;Donets Basin, Dnieper Basin, Lvov-Volyn' Basin, deposits of the western provinces of Moldavia and the Ukraine, White Russia, Transcaucasia and the Northern Caucasus] Ugol'nye basseiny i mestorozhdeniia iuga Evropeiskoi chasti SSSR; Donetskii bassein, Dneprovskii bassein, L'vovsko-Volynskii bassein, mestorozhdeniia zapadnykh oblastei Ukrainy i Moldavii, Belorussii, Severnogo Kavkaza i Zakavkaz'ia. 1963. 1210 p. (MIRA 17:3)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy geologicheskiy komitet.

IVANOV, G.A.; POPOV, A.M.

Electric properties of bismuth-antimony alloys. Fiz. tver tela 5 no.9:2409-2419 S '63. (MIRA 16:10)

1. Leningradskiy gosudarstvennyy pedagogicheskiy institut im. A.I.Gertsena.

IVANOV, G.A.; CHISTYAKOV, B.I.

Electric properties of ternary bismuth alloys in a temperature range of 77-450 K. Fiz. met. i metalloved. 16 no.6:848-855 D '63. (MIRA 17:2)

1. Leningradskiy pedagogicheskiy institut imeni A.I.Gertsena.

BETEKHTIN, A.G.[deceased]; GOLIKOV, A.S.; DYBKOV, V.F.; IVANOV, G.A.; KARYAKIN, A.Ye.; KIRYUKOV, V.V.; KUPROV, I.G.; NAGAK'YAN, I.G.; STROKA, P.A.; TATARINOV, P.M.; CHEKHOVICH, Ye.D.; SMIRNOV, V.I., retsenzent

[Course in mineral deposits] Kurs mestorozhdenii poleznykh iskopaemykh. Izd.3., perer. i dop. Moskva, Nedra, 1964. 589 p. (MIRA 18:3)

IVANOV, G.A., doktor geol.-miner. nauk, otv. red.

[History of the coal accumulation in the Pechora Basin] Istoriia uglenakopleniia v Pechorskom basseine. Moskva, Nauka, 1965. 246 p. (MIRA 18:9)

1. Leningrad. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut. Otdel geologii uglya i goryuchikh slantsev.

L 04229-67 EWT(l)/EWT(m)/EWF(w)/T/EWP(t)/ETI IJP(c) JD/GG

ACC NR: AR6031897 SOURCE CODE: UR/0058/66/000/006/E131/E131

37

AUTHOR: Ivanov, G. A.

TITLE: Correlation between electrical and galvanomagnetic properties of single-crystal and polycrystal specimens

SOURCE: Ref. zh. Fizika, Abs. 6E1021

REF SOURCE: Uch. zap. Leningr. gos. ped. in-ta im. A. I. Gertsena, v. 265, 1965, 193-204

TOPIC TAGS: crystal property, single crystal property, polycrystal property, galvanometric property

ABSTRACT: It is shown at what anisotropy values and experimental errors it is possible to use simple formulas which link the electrical properties of single-crystals and polycrystals. The conclusions are confirmed by experimental data for Bi and its alloys. [Translation of abstract]

SUB CODE: 09, 20/

1/1

L 00420-67 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6026703 SOURCE CODE: UR/0181/66/008/008/2460/2461

AUTHOR: Grabov, V. M.; Ivanov, G. A.

ORG: Leningrad State Pedagogical Institute im. A. I. Gertsen (Leningradskiy gosudarstvennyy pedagogicheskiy institut)

TITLE: Behavior of differential thermal emf in bismuth alloys

SOURCE: Fizika tverdogo tela, v. 8, no. 8, 1966, 2460-2461

TOPIC TAGS: bismuth alloy, tin alloy, thermal emf

ABSTRACT: The temperature dependence of the differential thermal emf $\alpha_{11}$ and $\alpha_{33}$ of Bi-Sn alloys containing various amounts of tin was studied (Fig. 1). As the temperature drops, the sign of the differential thermal emf of the alloy with 0.2 at. % Sn changes from negative to positive, but the anisotropy of the thermal emf remains considerable. This indicates current carriers belonging to several nonequivalent groups participate in the transfer phenomena. In all of the Bi-Sn alloys containing up to 1.0 at. % Sn, the nature of the temperature dependence of $\alpha_{33}$ remains the same. As the Sn content increases, the point at which the sign of $\alpha_{33}$ changes shifts toward higher temperatures. In the alloy with 0.4 at. % Sn, the thermal emf $\alpha_{11}$ becomes negative at low temperatures. In alloys with a high Sn content, $\alpha_{11}$ is negative in the entire 80-300°K range. This fact and the strong anisotropy of the thermal emf in all the Bi-Sn alloys indicate that not only holes, but also electrons participate in the

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L 06128-67

ACC NR: AP6026703

transfer phenomena, and that the band structure of these alloys is highly complex. Orig. art. has: 2 figures.

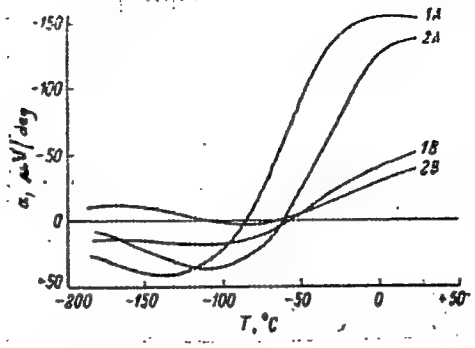



Fig. 1. Temperature dependence of the thermal emf $\alpha_{33}$ (curves A: 1 - 0.2 at. % Sn, 2 - 0.4 at. % Sn) and $\alpha_{11}$ (curves B: 1 - 0.2 at. % Sn, 2 - 0.4 at. % Sn) of Bi-Sn alloys.

SUB CODE: 11,20/ SUBM DATE: 15Jan66/ ORIG REF: 002/ OTH REF: 003

Card 2/2

ACC NR: AR6033792 SOURCE CODE: UR/0058/66/000/007/E103/E103

AUTHOR: Glukhova, T. I.; Grabov, V. M.; Ivanov, G. A.; Popov, A. M.

TITLE: Electrical properties of quasi-binary alloys (Bi-Sb)-Te

SOURCE: Ref. zh. Fizika, Abs. 7E773

REF SOURCE: Uch. zap. Leningr. gos. ped. in-ta im. A. I. Gertsena, v. 265, 1965, 234-241

TOPIC TAGS: Hall effect, thermoelectromotive force, bismuth alloy, antimony alloy, tellurium alloy, temperature dependence, quasibinary alloy, binary alloy, conduction band

ABSTRACT: On the basis of investigation of the Hall effect, the specific resistance ($\rho$) and the thermoelectromotive force, a study is made of the structure of the conduction band in single and polycrystalline alloys (Bi-Sb)-Te, containing 3, 6, 8, 10, 15, and 20 at % of Sb, and 0.1, 0.2, and 0.3 at % of Te. It is found that the addition of T lowers $\rho$, while the addition of Sb raises it in comparison with the $\rho$ of initial Bi-Sb alloys. The values of effective electron masses found (m*) correspond to the values m* in the initial alloys. Depending on the concentra-

Card 1/2

ACC NR: AR6033792

tion of Sb at 300K, the character of the m* changes is in accord with the data of Smith [RZhFiz., 1963, 7E617], obtained at 1.3K, which indicates a low temperature dependence of m* of the alloys investigated. [Translation of abstract] [GC]

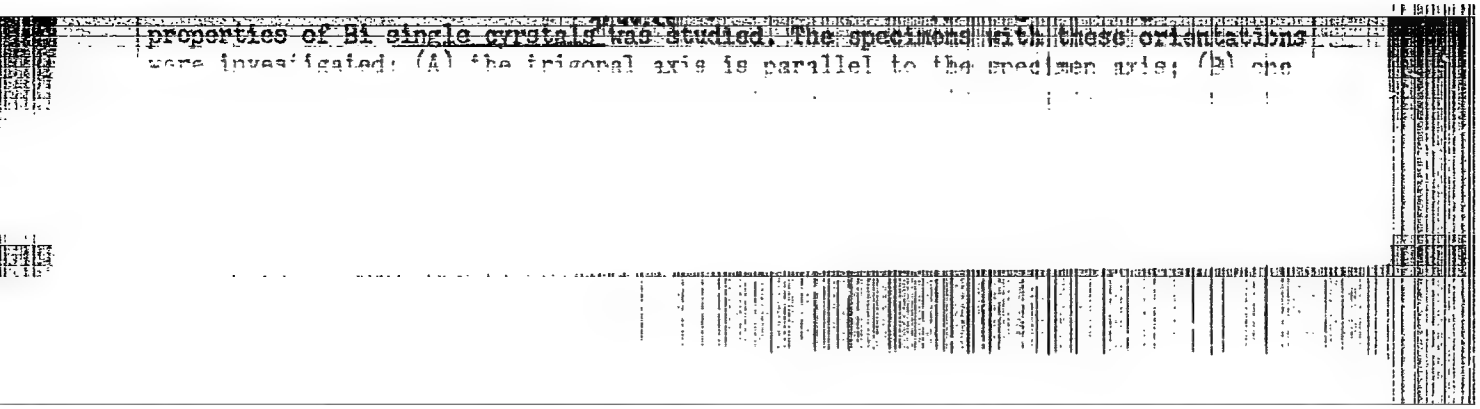
SUB CODE: 20, 11/

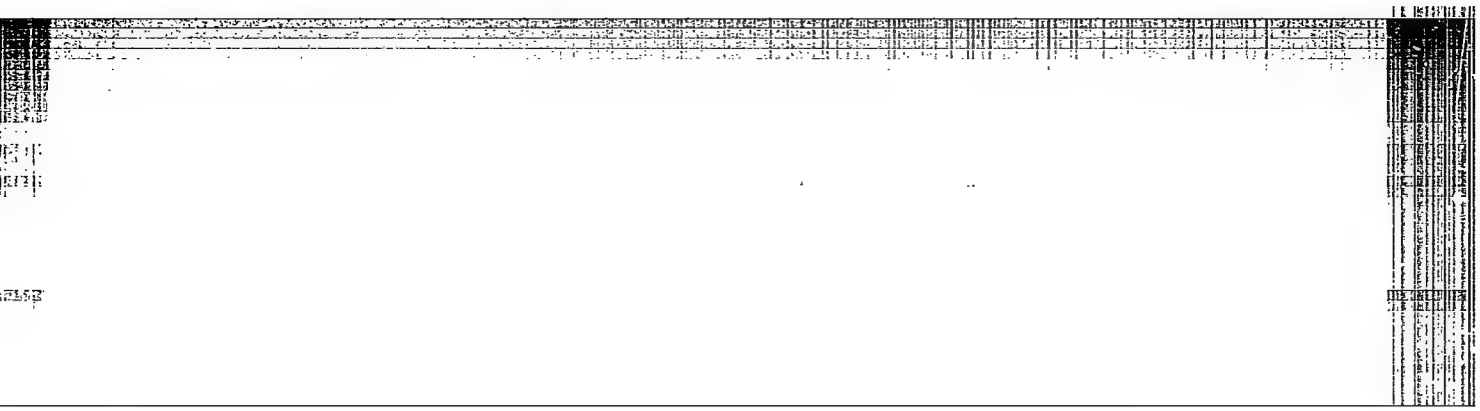
Card 2/2

IVANOV, G.A.; RYABOVA, L.A.; SAVITSKAYA, Ya.S.; MATSKEVICH, T.L.; CHELYSHKOV, S.P.

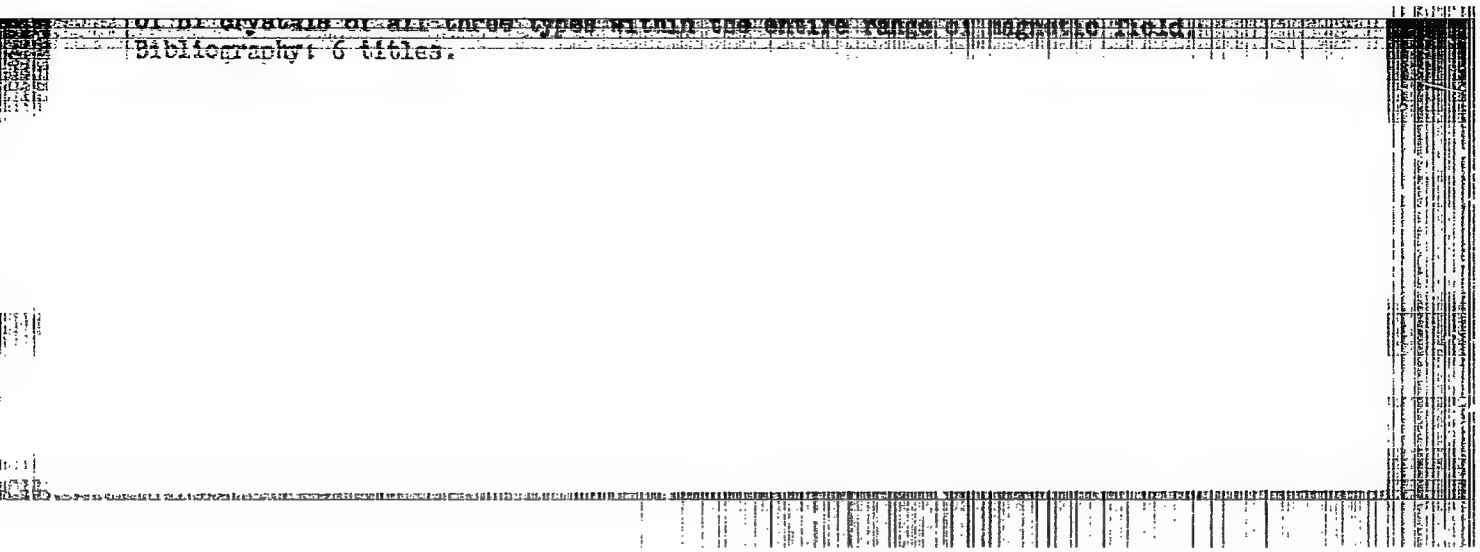
Second Scientific Session of the Science Council on Physical Electronics. Radiotekh. i elektron. 10 no.6:1165-1166 Je '65. (MIRA 18:6)

TITLE: Anisotropy of galvanomagnetic properties in single crystals of bismuth and


properties of Bi single crystals was studied. The specimens with these orientations
were investigated: (A) the trigonal axis is parallel to the specimen axis; (B) the



APPROVED FOR RELEASE: 08/10/2001 CIA-RDP86-00513R000619020019-3"



DEMENT'YEV, V.M.; KERZHENTSEV, Yu.P.; TISHCHENKO, A.T.; KHVASUKHIN, Yu.I.; IVANOV, G.A.

Flameless burning of gas in a furnace with a fluidized bed. Gaz. prom. 10 no.6:29-32 '65. (MIRA 18:6)

ZHDANOV, M.M.; KOSTRYUKOV, G.V.; ASFANDIYAROV, Kh.A.; MAKSUTOV, R.A.; KONDAKOV, A.N.; TURUSOV, V.M.; SILIN, V.A.; PILYUTSKIY, O.V.; SHELDYBAYEV, B.F.; PETROV, A.A.; SMIRNOV, Yu.S.; KOLESNIKOV, A.Ye.; DROZDOV, I.P.; IVANTSOV, O.M.; TSYGANOV, B.Ya.; KORNONOGOV, A.P.; VDOVIN, K.I.; ALEKSEYEV, L.A.; GAYDUKOV, D.T.; LIPOVETSKIY, A.Ya.; DANYUSHEVSKIY, V.S.; VEDISHCHEV, I.A.; ALEKSEYEV, L.G.; KRASYUK, A.D.; IVANOV, G.A.

Author's communications. Neft. i gaz. prom. no.2:67-68 Ap-Je '64. (MIRA 17:9)

L 44279-66 EWT(m)/T WW/DJ

ACC NR: AP6005370 (A) SOURCE CODE: UR/0413/66/000/001/0117/0117

INVENTOR: Perel'man, R. G.; Skubachevskiy, G. S.; Polikovskiy, V. I.; Ivanov, G. A.

ORG: none

TITLE: Hydrostatic bearing. Class 47, No. 177711

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1966, 117

TOPIC TAGS: ~~bearing~~, hydrostatic bearing, bearing stability

ABSTRACT: This Author Certificate introduces a hydrostatic bearing with grooves and a control mechanism for feeding the lubricating fluid to the friction surfaces. For greater reliability and ease of construction the control mechanism is two grooves tapering toward each other whereby the intake groove is more tapered than the outlet groove (see Fig. 1). Orig. art. has: 1 figure.

Card 1/2 UDC: 621.822.5

L 44279-66

ACC NR: AP6005370

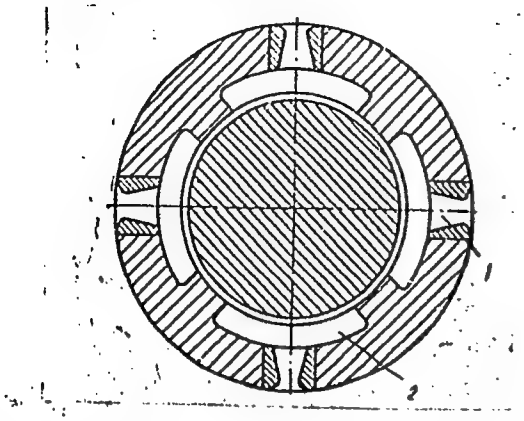


Fig. 1 Hydrostatic bearing.
1— grooves;
2— chambers

SUB CODE: 13/ SUBM DATE: 04Apr64 [LD]

Card 2/2 mjs

IVANOV, G.B.; VOSHCHANOV, K.P., inzhener, retsenzent; KRYLOV, V.I. inzhener, redaktor; GOLOVIN, S.Ya., inzhener, redaktor; ZVEGIN-TSEVA, K.P., inzhener, redaktor; UVAROVA, A.F., tekhnicheskiy redaktor.

[Correcting defects in cast iron] Ispravlenie defektor chugunnogo lit'ia. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry. 1955. 121 p. (MLRA 8:11)
(Cast iron--Welding)

IVANOV, G.B.

OBRUCHEV, S.V.

"Through sluicing by rapid streams." G.B.Ivanov. Reviewed by S.V.Obruchev. Izv. Vses. geog. ob-va 88 no.1:103-104 Ja-F '56. (Sluices) (Ivanov, G.B.) (MLRA 9:6)

IVANOV, G.B.

Constructing reinforced concrete bin trestles at the Makeyevka metallurgical plant. Stroi. prom. 35 no.5:2-5 My '57. (MLRA 10:6)

1. Glavnyy inzhener Tresta Makstroy.
(Makeyevka--Blast furnaces) (Precast concrete construction)

IVANOV, G.B.

Quality characteristics and conditions of burning Angren coal.
Izv. AN Uz. SSR. Ser. tekh.nauk no.6:3-16 '60. (MIRA 14:1)

1. Sredneaziatskiy politekhnicheskiy institut i Institut energetiki i avtomatiki AN UzSSR.
(Angren Basin--Coal)

94-3-10/26

AUTHORS: Ivanov, G.D., Bortnikov, M.G. and Zatulovskiy, N.M.

TITLE: Modifications to the Control Circuits for Lifting Tables on a Plate Mill to Shorten the Rolling Cycle (Izmeneniye skhemy upravleniya podyemnykh stolov tolstolistovogo stana dlya sokrashcheniya tsikla prokatki)

PERIODICAL: Promyshlennaya Energetika, 1958, Vol.13, No.3, pp. 18 - 19 (USSR).

ABSTRACT: This is a suggestion that received fifth premium in an All-Union competition for the economy of electric power.
An important factor in determining the time required to roll a billet on a plate mill is the time required to raise and lower the tables. Lowering seldom causes delay, because the operator can commence to lower them before the work leaves the rolls. However, if the raising is commenced too soon, damage may be done.
At the works imeni Petrovskiy, the electric motors driving the table lifts were controlled by the circuit given in Fig.1. An oscillogram taken when the motor was working with this control circuit is given in Fig.2, and shows that the motor is accelerating throughout the period of lifting of the table. It was, therefore, desirable to increase the acceleration of the motor. After trying different values of starting resistance and delay

Card1/2

94-3-10/26

Modifications to the Control Circuits for Lifting Tables on a Plate Mill to Shorten the Rolling Cycle

time of the accelerating relay, the new circuit shown in Fig.3 was proposed. It contains no accelerating relay nor counter-current relay, and a few other parts are left out. An oscillogram of the operation of the motor with the new circuit is given in Fig.4. The acceleration time has been cut from 2.5 to 0.9 sec and the total time required for lifting is cut from 4.38 to 3.25 sec. The total time saved in rolling a sheet is 4 sec; thus, it was possible to roll a further 4 000 tons a year of sheet, whilst saving some 200 000 kWh of electric power.
There are 4 figures.

AVAILABLE: Library of Congress
Card 2/2

GRIGOR'YEV, B.V.; KIPERMAN, S.Ya.; IVANOV, G.F.; RYABINOK, A.G., red.; TELYASHOV, R.Kh., red.izd-va; GVIRTS, V.L., tekhn.red.

[New method of anode mechanical working of metals with a band] Novyi sposob obrabotki metallov metodom anodnogo tocheniia lentoi. Leningrad, 1963. 15 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Elektrotekhnologicheskie protsessy i ustroistva, no.8) (MIRA 17:4)

IVANOV, G. F.

"Study of the Conditions for Obtaining Spongy Iron for the Complex Hydroflotation Process of 'Aeroflotation'." Sub 19 Nov 51, Moscow Inst of Nonferrous Metals and Gold imeni M. I. Kalinin
Cand Technical Sci.
Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

IVANOV, G.F. Deceased

Anatomy

See ILC

ZEFIROV, A.P., professor, doktor tekhn. nauk, red.; IVANOV, G.F., kand. tekhn. nauk, red.; NEVSKIY, B.V., kand. tekhn. nauk, red.; SAGURO, M.A., red.; MAZEL', Ye.I., tekhn. red.

[Transactions. Selected reports by foreign scientists] Trudy. [Izbrannye doklady inostrannykh uchenykh] Moskva, Izd-vo Glav. uprav. po ispol'zovaniiu atomnoi energ. pri Sovete Ministrov SSSR. Vol.7.[Technology of atomic raw products] Tekhnologiia atomnogo syr'ia. Pod obshchei red. A.P.Zefirova. 1959. 656 p. (MIRA 14:7)

1. Vtoraya mezhdunarodnaya konferentsiya po mirnomu ispol'zovaniyu atomnoy energii, Zheneva, 1958.
(Uranium ) (Thorium )